

**REMARKS**

Claims 1, 4, 7-19, and 22-51 are pending. By this Amendment, claims 2-3, 5-6 and 20-21 are canceled without prejudice or disclaimer, claims 1, 4, 7, 10-13, 15-19, 22-24, 26-29, 32, and 36-37 are amended, and claims 38-51 are added. Support for the claims can be found through the specification, including the original claims, and the drawings. Reconsideration in view of the above amendments and following remarks is respectfully requested.

The Examiner is thanked for the indication that claims 7-9, 12-16, 24-26, and 29-33 would be allowable if rewritten in independent form including all the limitations of the base claim and any intervening claims. Claim 7, 12-13, 15-16, 24, 29, and 32-33 have been rewritten in independent form. Accordingly, these claims should be in condition for allowance along with claims 8-9, 14, 25-26, and 30-31, which depend respectively from independent claims 7, 13, 24, and 29.

The Office Action rejected claims 1-6, 10-11, 17-18, 19-23, 27-28, and 34-37 under 35 U.S.C. §102(e) as being anticipated by Benaron et al. (hereinafter "Benaron," U.S. Patent No. 5,762,609). Claims 2-3 and 20-21 have been canceled and the subject matter generally incorporated into independent claims 1 and 19, respectively. Claims 5-6 have also been canceled. The rejection is respectfully traversed.

Independent claim 1 has been amended to recite, *inter alia*, measuring received electromagnetic radiation using at least biochemical and morphological spectroscopic methods to generate spectroscopic measurements, combining the at least one biochemical and one

morphological measurements, and determining a condition of the target tissue based on the combined measurements, wherein the biochemical spectroscopic method comprises at least one of fluorescence, time resolved fluorescence, or fluorescence anisotropy and the morphological spectroscopic method comprises at least one of absorption, reflectance, or polarized reflectance.

The inventors of the present application have developed a multimodal approach which they found successful at decoupling biochemical changes from morphological changes in target tissue.

The inventors of the present application discovered that by using at least biochemical and morphological spectroscopic methods, the biochemical spectroscopic method comprising at least one of fluorescence, time resolved fluorescence, or fluorescence anisotropy and the morphological spectroscopic method comprising at least one of absorption, reflectance, or polarized reflectance, they could decouple biochemical from morphological changes. The biochemical spectroscopic method comprising at least one of fluorescence, time resolved fluorescence, or fluorescence anisotropy is more sensitive to the biochemical changes in the target tissues due to, for example, cancer, while the morphological spectroscopic method comprising at least one of absorption, reflectance, or polarized reflectance is more sensitive to the morphological changes in the target tissue due to, for example, cancer. Benaron does not disclose or suggest such features, that is using specific biochemical and morphological spectroscopic methods to decouple biochemical changes from morphological changes in target tissue. Rather, Benaron merely teaches selecting methodology from one or more of transmission, reflection, scattering, fluorescence, and remission of energy emitted into tissue in

order to analyze or monitor the tissue during surgical interventions that change the character of tissue, such as tissue welding.

Similarly, independent claim 19 has been amended to recite, *inter alia*, a processor configured to determine characteristics of the target tissue using at least one biochemical and one morphological spectroscopic methods, wherein the processor combines the characteristics determined by each of the two or more spectroscopic methods and determines a condition of the target tissue based on the combined determined characteristics, wherein the biochemical spectroscopic method comprises at least one of fluorescence, time resolved fluorescence, or fluorescence anisotropy and the morphological spectroscopic method comprises at least one of absorption, reflectance, or polarized reflectance. Independent claim 36 has been amended to recite, *inter alia*, determining characteristics of the received electromagnetic radiation using at least first and second spectroscopic methods, thereby decoupling and detecting biochemical changes and morphological changes in the target tissue occurring due to disease, wherein the first spectroscopic method comprises at least one of fluorescence, time resolved fluorescence, or fluorescence anisotropy and the second spectroscopic method comprises at least one of absorption, reflectance, or polarized reflectance. Independent claim 37 has been amended to recite, *inter alia*, a processor configured to determine characteristics of the received electromagnetic radiation using at least first and second spectroscopic methods, thereby decoupling and detecting biochemical changes and morphological changes in the target tissue occurring due to disease and determine a condition of the target tissue based on the determined

characteristics, wherein the first spectroscopic method comprises at least one of fluorescence, time resolved fluorescence or fluorescence anisotropy and the second spectroscopic method comprises at least one of absorption, reflectance, or polarized reflectance. As set for the above, Benaron does not disclose or suggest such features.

Accordingly, the rejection of independent claims 1, 19, and 36-37 over Benaron should be withdrawn. Dependent claims 4, 10-11, 17-18, 22-23, 27-28, and 34-35 are allowable at least for the reasons discussed above with respect to independent claims 1 and 19, from which they respectively depend, as well as for their added features. Further, Benaron does not disclose or suggest, with respect to dependent claim 4, time resolved fluorescent methods. Furthermore, with respect to dependent claim 22, Benaron does not disclose or suggest substantially simultaneously sensing fluorescent radiation emitted by endogenous fluorophores in response to the excitation electromagnetic radiation and the excitation electromagnetic radiation that is scattered from the target tissue. With respect to dependent claim 23, Benaron does not disclose or suggest using intensity based measurements on both the electromagnetic radiation emitted from the target tissue or fluorescent radiation emitted by endogenous fluorophores in response to the excitation electromagnetic radiation and the excitation electromagnetic radiation that is scattered from the target tissue. Additionally, with respect to dependent claims 11 and 28, Benaron does not disclose or suggest method steps or a processor configured for dividing a target tissue into two or more field areas, determining a condition of the target tissue in each of

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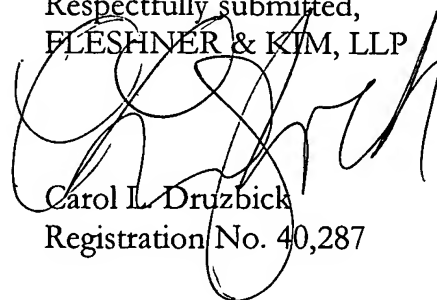
the field areas and then determining a condition of the target tissue by comparing each of the field areas.

Added claims 38-51 are also allowable over Benaron, for the reasons discussed above with respect to independent claims 1, 19, 36 and 37, from which they respectively depend, as well as for their added features.

In view of the foregoing amendments and remarks, it is respectfully submitted that the application is in condition for allowance. If the Examiner believes that any additional changes would place the application in better condition for allowance, the Examiner is invited to contact the undersigned attorney, Carol L. Druzbeck, at the telephone number listed below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this, concurrent and future replies, including extension of time fees, to Deposit Account 16-0607 and please credit any excess fees to such deposit account.

Respectfully submitted,  
FLESHNER & KIM, LLP



Carol L. Druzbeck  
Registration No. 40,287

P.O. Box 221200  
Chantilly, Virginia 20153-1200  
(703) 766-3701 CLD/kah

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**Please direct all correspondence to Customer Number 34610**